

Appl. No. 10/647,121
Reply to Office Action of April 18, 2005

Remarks

Reconsideration is respectfully requested in light of the foregoing amendments and remarks that follow.

Claims 1-36 are pending in the application, with claims 1, 16 and 25 being the independent claims. Claims 1, 12, 13, 15, 16, 21 and 25 are amended. Claims 16 and 25 have been place in independent form per the suggestion of the Examiner. Claims 1, 12, 13 and 21 have been amended to address points raised in the Office Action. Claim 12 and 15 include house-keeping amendments. In addition, claim 1 has been further amended to distinguish over the applied art. As amended, claim 1 indicates that the stators is mounted on a holder with the open side of the stator receptacle facing the holder and the holder is a printed circuit board.

With regard to the objections to the specification, the specification has been amended to address the points raised in the Office Action in particular to the reference to "claim 1 or 16" on page 1 at line 3 has been deleted as has the reference to "dependent claims" on page 4, at line 34 and the "characterizing" phrase(s) of claims 1 or 16 referred to on page 3 has amended to delete the claim reference(s) and to include the relevant material from original claims 1 and 16.

With regard to the objection to the drawings under 37 C.F.R. 1.83 (a), a replacement for figure 2 is enclosed. The figure has been amended to show the placement of a conventional electrical switch so that it can be activated by the rotation of the 16. The description of this arrangement appears in the paragraph bridging pages 5 and 6. No new matter is believed to have been introduced.

With regard to the objection to the Abstract, the Abstract has been amended to address the points raised in the Office Action.

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Claims 28 and 29 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. Applicants respectfully traverse.

It appears that the Examiner has concerns relative as to whether a process for injecting a metal stamp grid into a molded part and also as to whether a process for incorporating conductor tracks by means of a molded interconnected device (MID) existed at the time of filing. It is respectfully submitted that both techniques were in existence at the time the application was filed. As such, these known techniques did not have to appear in the specification as filed. With regard to claim 28, the injection molding of a stamping grid into a stator is shown, for example, in U.S. Patent No. 5,712,611 (a copy of the cover sheet is attached). With regard to claim 29, the integration of conductor tracks into a stator as a MID is described, for example, in U.S. Patent No. 5,068,714 (a copy of the cover sheet is attached).

Withdrawal of the rejection is respectfully requested.

Claims 1, 3, 4, 6, 8, 11, 13, 23, 27, 29, and 31 are rejected under 35 U.S.C. 102(b) as being anticipated by Wolf et al. (U.S. Patent No. 5,497, 081). Applicants respectfully traverse.

For a reference to be anticipatory, it must teach each and every element required by the claim. Here, the magnet sensor (43) of Wolf et al. is not a Hall sensor which is sensitive in two-dimensions for magnetic fields parallel to its chip surface. Further, the magnetic sensor (43) is not fastened to the underside of stator (22') situated on the receptacle (108) on the side opposite the open side. There does not appear to be a disclosure in Wolf et al of the use of the device as a rotary switch or the use of the device in an appliance such as a washing machine.

Wolf et al. discloses an angle position sensor (20) provided with a housing (22), for a butterfly valve (28) (The Examiner appears to be relying on Figure 1). The angle position sensor (20) has a rotor (24) with a bar magnet (42) and a magnet sensor (43), which consists of a Hall-effect IC. The housing (22) serves as a stator which receives the rotor (24). Figure 1 of Wolf et al. is silent as to the detailed shape of the stator. Figure 14, however, does show a pot-shaped

receptacle (108) for the rotor (24), which is also open on one side. The magnet (42), however, is placed in the recess (112) in the rotor (24), on the rotational axis of the rotor (24).

In arrangement (60), the magnetic sensor (43) can be seen together with flux concentrators (44), (46), enlarged in Fig. 2, as well as in Fig. 3 or 12. This clearly shows that the magnetic sensor (43) is parallel to the rotary axis (50) (see figure 2) and hence is positioned vertically on the axis 52 (see figure 3) of the magnet 42. Accordingly, the chip surface of the magnetic sensor (43) is sensitive to magnetic fields not of vertical orientation and not a parallel orientation like that claimed.

Also, a receptacle of pot-shaped configuration is not mentioned in Fig. 1. The magnetic sensor (43) in Fig. 14 is fastened to a carrier (94'), however carrier (94') is located at the open side of the receptacle (108) in the stator (22'). Accordingly, the arrangement of the magnetic sensor in Figure 14 is directly opposed to the claimed arrangement.

Accordingly, claim 1 and the rejected claims dependent thereon are not anticipated.

Claims 1, 2, 4, 7, 9, 23 and 30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Welles (U.S. Patent No. 4,415,856 ('856)) in view of Sidor et al. (U.S. Patent No. 3,988,710). Applicants respectfully traverse.

Welles ('856) describes a solid-state rotary switch which utilizes a magnetic member contained in a rotatable knob, with the magnet mounted above a pair of magnetic field sensors having the sensor axes established substantially perpendicular to each other. Welles describes a device for adjusting angles of rotation, including a printed circuit board (56) on which a magnetic sensor (54) is located. This device further including a rotor (50) which is rotatably arranged on a stator and has a magnet (11) (see figure 2). This is a conventional arrangement. There is no pot-shaped housing. Further, the magnetic sensor (54) is not fastened to the underside of the stator (52).

Sidor et al. shows a rotary potentiometer having a pot-shaped housing (22) in which a rotor (24) with a magnet (26) and a distance plate (38) with magnetic sensors (46), (48) are arranged (see Figure 1). The magnetic sensors (46), (48) consist of a measuring wire. These sensors are not Hall sensors, which Hall sensor is two-dimensionally sensitive parallel to the chip surface. In addition, the sensors (46), (48) are not fastened to the underside of the housing (22) which serves as a stator.

These teachings, even in combination, appear to be incomplete relative to the elements required by the claims, especially as amended.

Further, there are deficiencies in the prima facie case relative to motivation and guidance. It is not clear why one would have been motivated to modified the device of the primary reference to arrive at the device as claimed. There is clearly no guidance as to how that would have been done. Withdrawal of the rejection is respectfully requested.

Claims 2, 5 and 28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wolf et al. in view of Bauer et al. (U.S. Patent no. 6,365,424). Applicants respectfully traverse.

The deficiencies of Wolf et al. are discussed above.

Bauer shows a pressure sensor with a housing (1) having a chamber (4) for receiving the sensor element (7) and further having an electronics device (6) (see figure1). The contact element (8) can be produced as a stamping grid and injection molded into the housing (1) (see also Figure 6). It is not a device for adjusting angles of rotation.

It is not seen how this reference remedies the deficiencies discussed above.

Withdrawal of the rejection is respectfully requested.

Claims 10 and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Welles (U.S. Patent No. 4,415,856) in view of Sidor et al. (U.S. Patent No. 3,988,710), and in further in view of Decker et al. (U.S. Patent No. 6,404,354). Applicants respectfully traverse.

Welles is discussed above.

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Decker et al. describe a rotary button (10) for a sensor (14) for control of a screen (17) or the like in electrical equipment (see Figure 1). A detailed configuration of the sensor is not disclosed. Elements (28), (29) (see Figure 2) are not electrical switches. These elements are springs of a latching and locking device (15).

These additional teachings do not remedy the deficiencies of Welles discussed above. Withdrawal of the rejection is respectfully requested.

Claim 15 is rejected under 35 U.S.C. 103(a) as being unpatentable over Wolf et al. in view of Alfors (U.S. Patent No. 5,512,820). Applicants respectfully traverse.

Wolf et al is discussed above.

Alfors describes a device for adjusting angles of rotation with a rotor (100), (102) having a projection (108) for receiving a magnet (10) (see figure 6). As far as can be seen, the projection is not moveable for making adjustments as claimed.

These additional teachings do not remedy the deficiencies discussed above.

Withdrawal of the rejection is respectfully requested.

Claim 24 is rejected under 35 U.S.C. 103(a) as being unpatentable over Welles (U.S. Patent No. 4,415,856) in view of Sidor et al. (U.S. Patent No. 3,988,710), as applied to claims 1 and 2 above, and further in view of Bissig et al. (U.S. Patent No. 4,843,196). Applicants respectfully traverse.

Welles is discussed above.

Bissig et al. describes a changeover device (4) for an electric switch (1), the wells (20) for the switch (1) and the changeover device (4) being made of plastic (see Figure 1). Bissig is not a device for adjusting angles of rotation.

These additional teachings do not remedy the deficiencies discussed above.

Withdrawal of the rejection is respectfully requested.

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Claim 26 is rejected under 35 U.S.C. 103(a) as being unpatentable over Welles (U.S. Patent No. 4,415,856) in view of Sidor et al. (U.S. Patent NO. 3,998,710), as applied to claim 1, and further in view of Roze et al. (U.S. Patent NO. 6,252,394). Applicants respectfully traverse.

Welles is discussed above.

Roze et al describes an angle position encoder (1) with a rotor (4) and a stator (5), the rotor (4) being held on the stator (5) by means of elastic lugs (13) (see fig. 1). This is a different arrangement than that claimed. Further, there is no teaching of a pot-shaped housing.

The additional teachings of Roze et al do not appear to remedy the deficiencies of Welles discussed above.

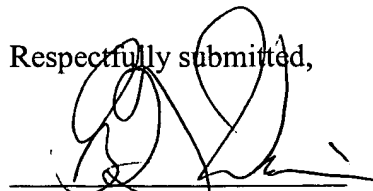
Withdrawal of the rejection is respectfully requested.

Having addressed the outstanding rejections and having made the requested amendments to the claims, the application is believed to be in condition for allowance. A notice to that effect is respectfully requested.

If the Examiner believes, for any reason, that personal communication will expedite prosecution of this application, the Examiner is hereby invited to telephone the undersigned at the number provided.

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Respectfully submitted,



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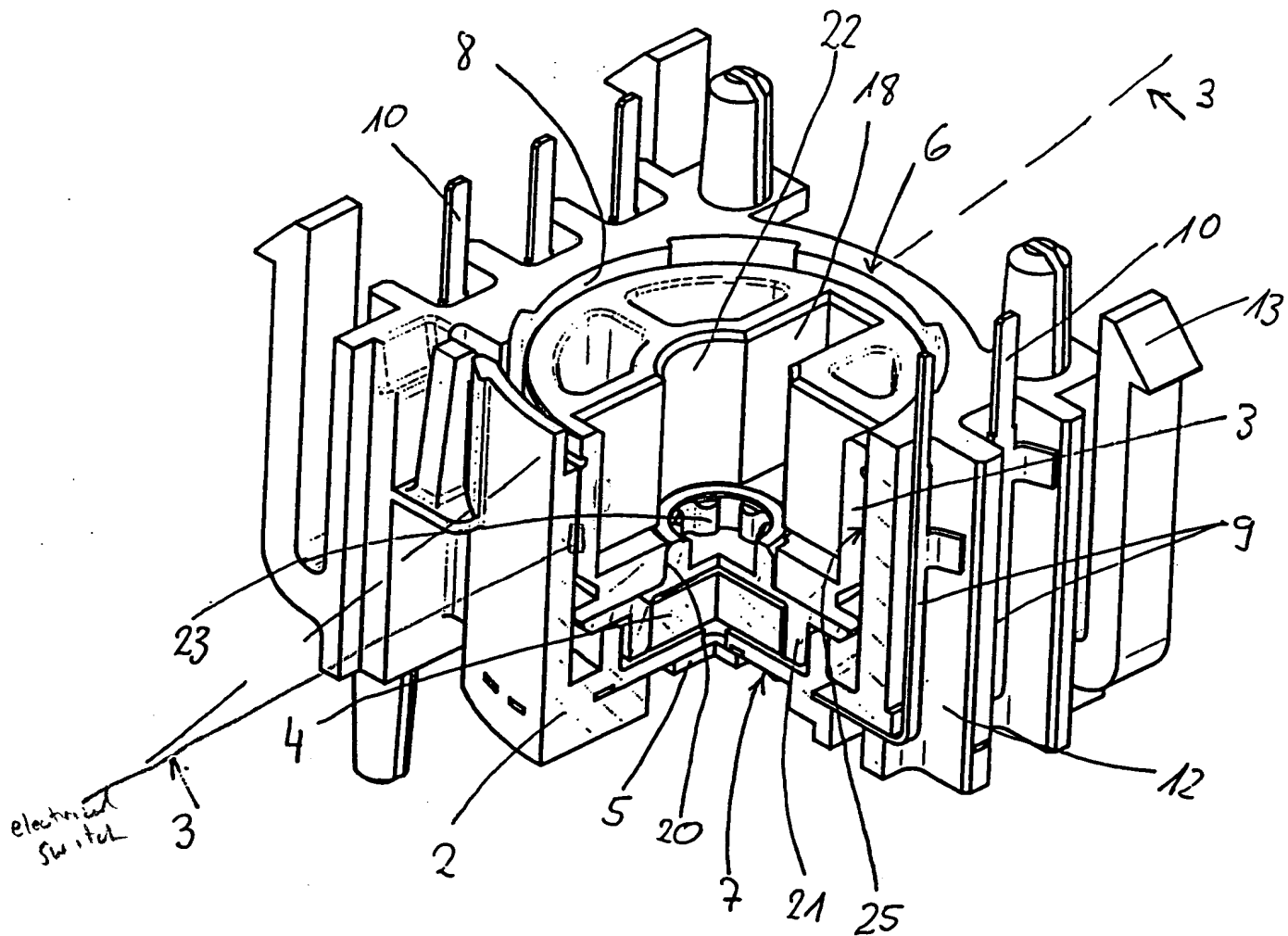


Fig 2

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